APPENDIX C

SECOND YELLOW MULE
&
SOUTH FORK WEST FORK GALLATIN RIVER

CULVERT REPLACEMENT PLAN

Yellowstone Mountain Club
Big Sky, Montana

Prepared for:

YELLOWSTONE MOUNTAIN CLUB
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LAND & WATER

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1.0 INTRODUCTION

This Plan is an appendix to a Consent Decree. The projects described in this Plan were selected in negotiations between the United States and YMC and other entities, in which YMC admitted no liability and maintained its position regarding the jurisdictional status of alleged waters of the United States. Nothing in this document, including the descriptions of any locations, constitutes an admission regarding the jurisdictional status of any location. No part of this document constitutes an admission of liability by YMC.

Two existing culvert crossings are proposed for reconstruction. The crossing at Second Yellow Mule Creek (SYMC) involves the replacement of an existing 60" corrugated metal pipe (CMP) located on Ranches Road as identified on maps include in Appendix A. The crossing at the South Fork West Fork Gallatin (South Fork) involves the replacement of a 72" squash CMP located upstream of the main Yellowstone Club bridge (Figure 1). Each of these culverts will be replaced with 12-foot diameter bottomless arch culverts.

2.0 EXISTING CONDITIONS

2.1 Second Yellow Mule Creek Crossing

The existing culvert is 60" in diameter and approximately 100 feet long. The bottomless arch that will be used to replace it will be similar in length. This new bottomless arch will allow the streambed to return to more natural conditions. The size of the bottomless culvert has been selected based on evaluation of velocity of flow and the physical configuration of the site, as described below.

The bankfull flow (Q2) is estimated to be 53 cubic feet per second (cfs) (see attached Hydrology Calculations in Appendix A). At this flow the velocity through the existing culvert is estimated to be 12.5 feet per second (fps) (page 2 of HY-8 model output in Appendix A) and should be reduced to 8.2 fps with the proposed culvert (page 5 of HY-8 model output in Appendix A). The bottomless arch will have footers buried 2 feet below channel grade to prevent scouring. This depth should be sufficient since the average scour depth is calculated to be 0.8 feet (see attached scour analysis results in Appendix A).

2.2 South Fork Crossing

The existing culvert is a squash culvert with a mean diameter of 72 inches. The new bottomless culvert will be similar in length to the existing culvert. The drainage area above the culvert is 4.1 square miles. Using the same regression equations as shown in the documentation for the Second Yellow Mule crossing, the bankfull discharge is estimated to be 80 cfs.

The South Fork Crossing will require a site specific survey before we can conduct any hydraulic design. The purpose of the survey is to calculate scour depth for purposes of designing footer installation. Upon completion of that survey in the summer of 2004, we will compute the scour depth and flow velocities in the same way as done for the Second Yellow Mule crossing. With this information we can show the reduced flow velocities from the current conditions to the new culvert and we can estimate potential scour depths so that the footers can be installed below that scour depth.

3.0 WORK PLAN

The implementation of the culvert replacements on both of these sites is expected to be virtually the same. Therefore, the steps in this work plan apply to both sites.

Construction will be conducted with careful attention paid to minimize water quality impacts. All construction activities will be done under the direction of a hydrologist or engineer familiar with the implementation of sediment mitigation measures. Regardless of what mitigation steps are taken certain activities in this project will result in some downstream movement of fine sediment. Examples of these activities are: the actual removal of the existing culvert, the return of all flow into the newly exposed channel bed under the new culvert, the installation of the rock weirs at the inlet and outlet (see last paragraph of this section). These impacts will be minimized by planning construction for late August or September, when flows are at their seasonal lows. In addition, a dewatering channel will be constructed as necessary in the center of the stream channel after the existing culvert is removed (see construction detail figure). This channel will be lined to minimize water seepage into excavation area. This dewatering channel will minimize impacts to water quality during excavation of footer trenches and installation of concrete footers.

A diversion of all streamflow, completely around the construction site will result in greater water quality impact than conducting the instream activities quickly and with diligent efforts to minimize the introduction of fine sediment into the stream. The reason for this is that redirection of flow would require a diversion of some sort. In streams the size of Second Yellow Mule and the South Fork, this diversion would need to be constructed of gravel or concrete blocks. The construction and dismantling of this diversion will require substantial in-stream excavation and placement of temporary fill In addition, depending on the circumstances, these structures are rarely 100% effective in dewatering the stream due to shallow subsurface seepage. Morover, these diversion can be susceptible to failure during thunderstorms or other runoff events that exceed design capacities, since installation of a diversion structure of equivalent size to the permanent structure (e.g., twelve foot width), is prohibitively expensive and, by definition, would have very significant impacts on its own. Finally, once the stream is returned to its original channel, there will be some downstream sedimentation caused by the winnowing of fine particles regardless of whether or not the construction area was dewatered. .

At both river crossings, construction of diversion channels would involve removal of natural vegetation, including possible temporary impacts on wetlands. Second Yellow Mule Creek is located in a very steep ravine, one side of which consists of large, unstable rocks and the other side is naturally bordered with mature vegetation. As the diversion channel could not be placed in the unstable rocky area, a right of way and work area would have to be cut for a diversion channel through steep, mature vegetation, assuming a reasonable design could be developed. Subsequent revegetation and protection against erosion could create additional difficulties.

For all of these reasons we feel it is preferable, from a water quality and habitat integrity perspective, to perform these culvert replacements in live water. Instream activities will be conducted in a manner that minimizes their duration

Impacts from any of the other activities associated with construction (removal of existing culverts and placement of new structures) can be successfully mitigated. Construction will be consistent with state stormwater permits. For example, silt fences can be installed at the toe of the road fill to minimize sloughing or sidecasting of soil and rock into the channel during excavation.

To help ensure channel stability after project completion, a rock weir will be constructed at both the inlet and outlet of each culvert to help ensure channel stability around the footers. We expect that each weir will be constructed of approximately 10 cubic yards each of angular rock with a median diameter (bulk) of 1.5 feet. These weirs will also help maintain a channel slope under the culverts that is conducive to upstream fish passage. Fillslopes will be stabilized with hydromulch to help ensure good growth of grass cover.

4.0 SUCCESS CRITERIA AND MONITORING

4.1 SUCCESS CRITERIA

The goal for these projects is an improvement in upstream passage for fish and amphibians. Replacement of the existing round culverts with bottomless culverts will meet this goal and improve fish passage. As discussed above, the hydraulic modeling that has been completed on the design supports this conclusion, showing that there will be a substantial reduction in flow velocity during a typical spring runoff (from 12.5 to 8.2 feet per second during a bankfull event). After successful installation of the bottomless culverts, the only factor with the potential to affect upstream passage is streambed stability. The channel through the culverts will be composed of the same natural substrate as found in the undisturbed channel above the culvert and, provided the streambed in the bottomless culverts remain stable, upstream passage will be improved. In other words, the projects are designed to meet the goal set for them and the only criteria to be achieved after successful replacement is maintenance of streambed stability. For that reason, the project will be considered a success so long as the bottomless culverts are successfully installed and a stable streambed results (see monitoring details below).

4.2 MONITORING

To determine whether these criteria are being met the following monitoring will take place once annually for five years after implementation:

1. After each year's spring runoff, take photographs at monumented photo points. Prior to construction in 2004, photo points will be selected and a first set of photos will be taken of the current conditions. A second set of photos will be taken of the conditions immediately after construction. The set of photos will include at least one photo of the streambed taken at each of three locations, including a maximum of 50 feet upstream of the culvert, 50 feet downstream of the culvert, and through the culvert.

2. Qualitatively describe the vertical stability of the channel upstream and downstream of the culvert as well as between the weirs (through the culvert).

The results of this monitoring will be presented in an annual monitoring report.

5.0 SCHEDULE AND DEADLINES

5.1 Enforceable Deadlines

The work described in this Appendix C is being undertaken pursuant to a Consent Decree entered into between the United States and various entities connected to the Yellowstone Mountain Club property. All disputes arising from this section may be subject to dispute resolution under the Consent Decree.

Table 1 shows the schedule and enforceable deadlines for the activities described herein.

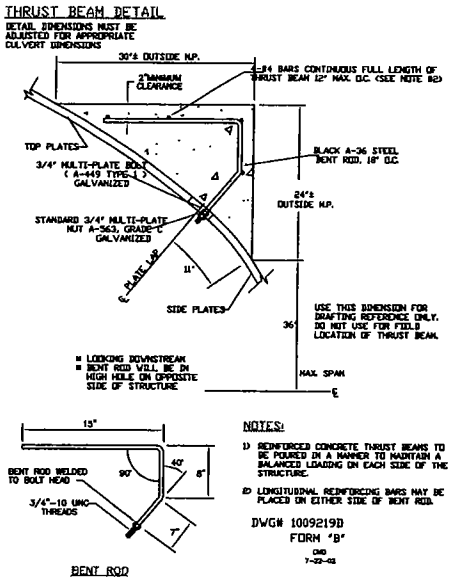
Table 1. ***Enforceable deadlines***

TASK	COMPLETION DATE
South Fork Survey and Design (deliverable will be a Design Memo)	August 1, 2004
Implementation of South Fork Project (assuming EPA approval of the survey and any design modifications no later than September 1, 2004)	October 15, 2004
Implementation of Second Yellow Mule Creek Project	October 30, 2004
Post-construction Status Report (showing photos of both completed projects)	November 15, 2004
Monitoring Report (one report for both projects)	October 1, 2005 and annually thereafter, for the period of monitoring.

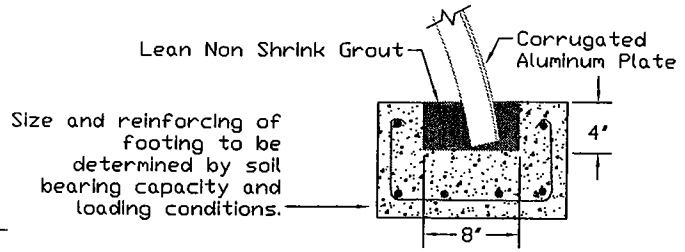
Appendix A

FIGURES AND HYDRAULIC CALCULATIONS FOR CULVERT REPLACEMENT PROJECTS

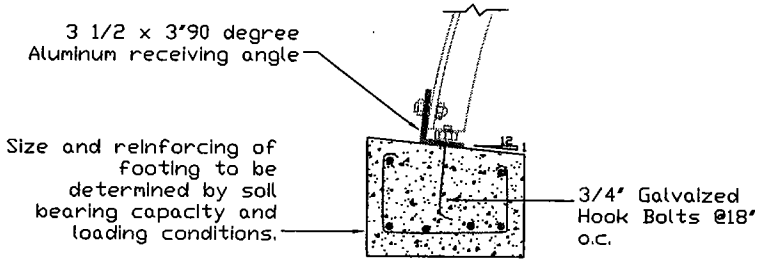
Typicl Arch Culvert Installation Details



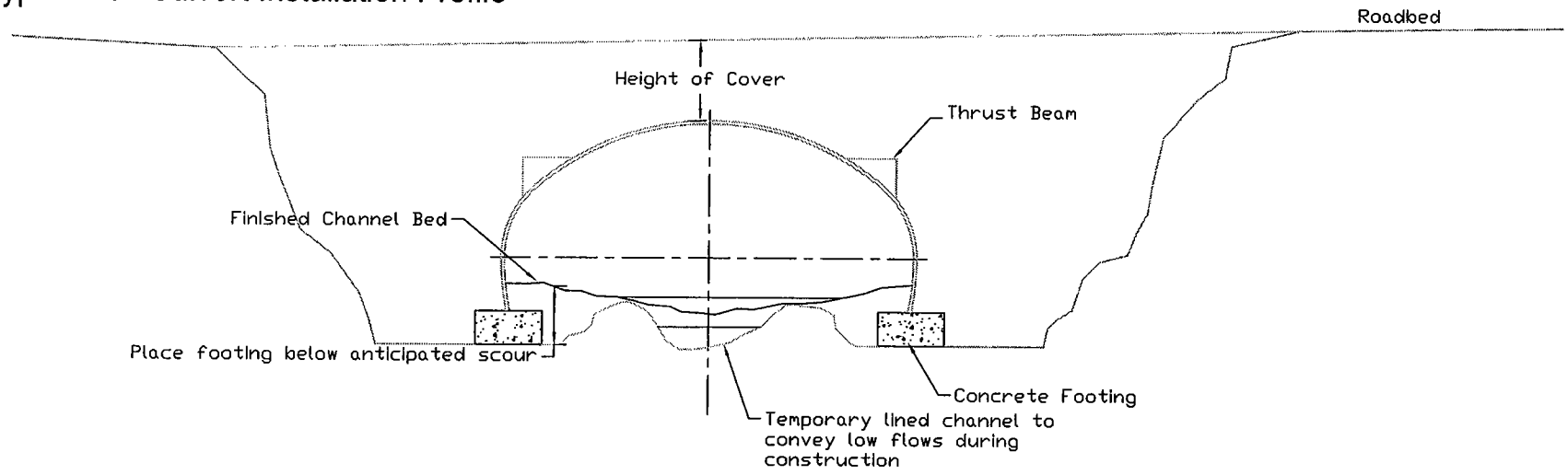
Concrete Footing with Angle



Slotted Concrete Footing



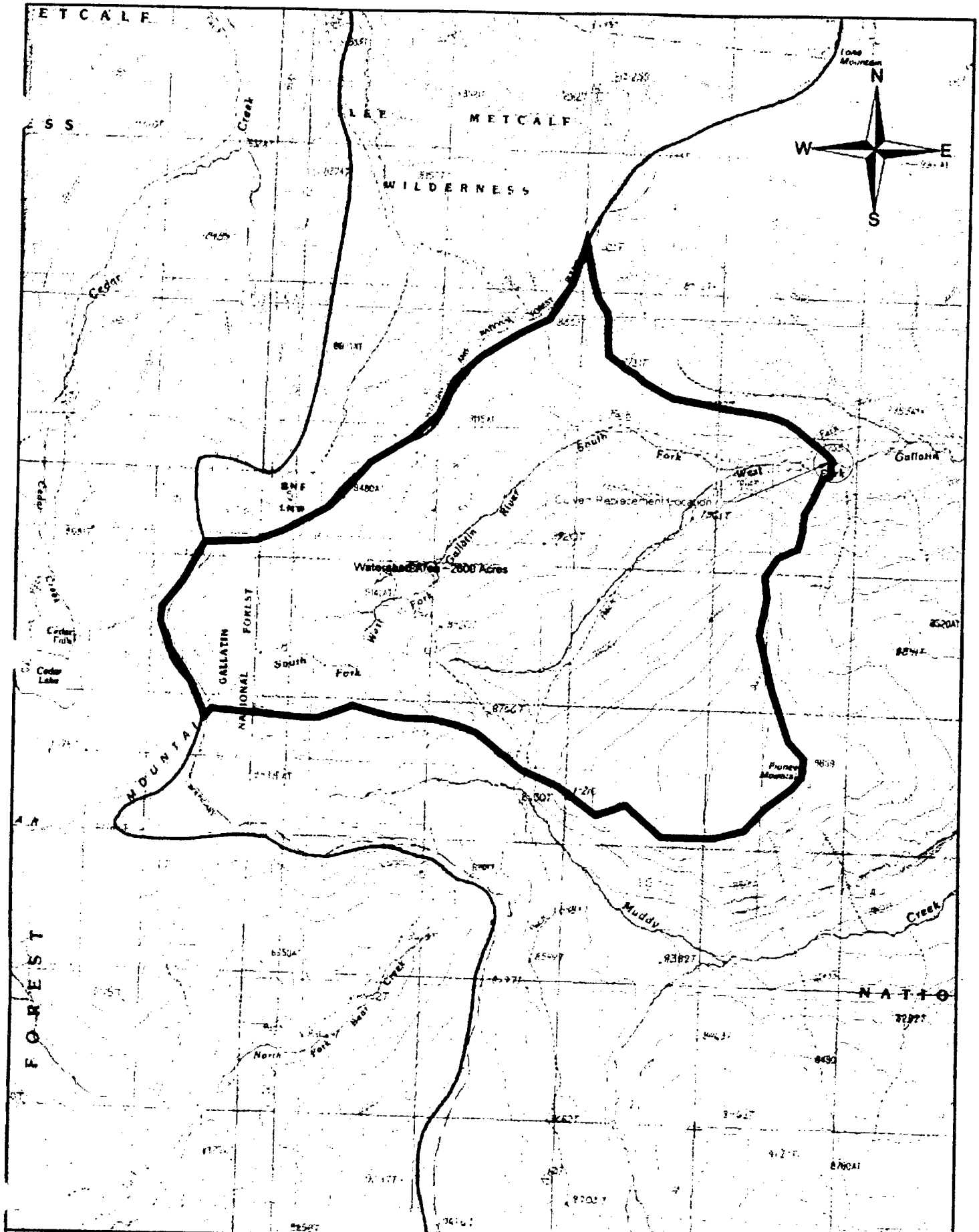
Typicl Arch Culvert Installation Profile



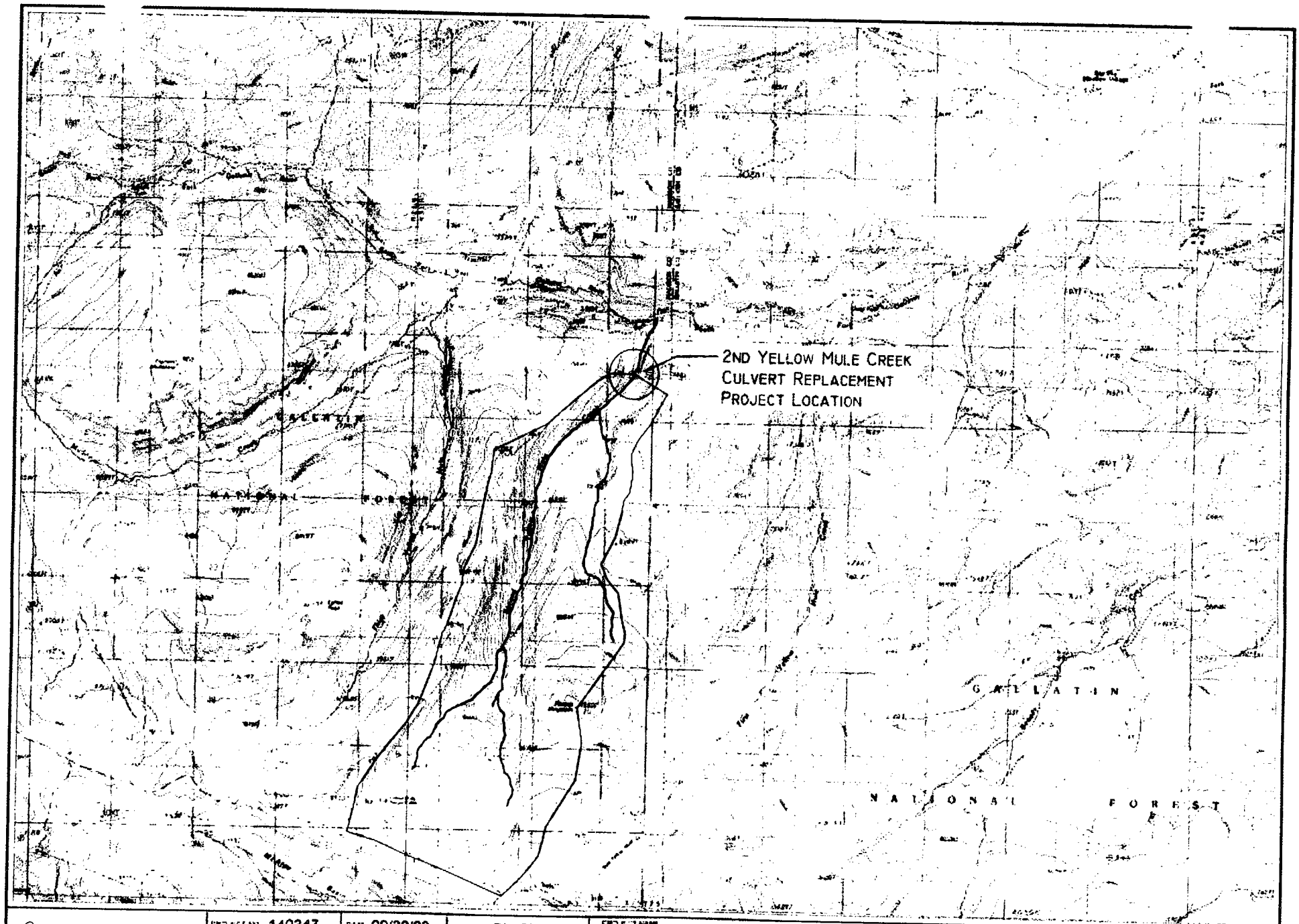
SHEET 1 OF -	LAND & WATER CONSULTING, INC. P.O. BOX 8254 Missoula, MT 59807	PROJ NO: 140347	DRAWN: MW
REVISION: - 5/9/04		LOCATION: Big Sky, MT	CHECKED: APPVD:
		SCALE: NOTED	PROJ MGR: PC
		FILE NAME: standard drawing.dwg	PLOTTED: May/10/2004

PROJECT NAME
Yellowstone Mountain Club

DRAWING TITLE
Typicl Arch Culvert Installation



LAND & WATER CONSULTING INC. P.O. BOX 7154 Missoula MT 59807	PROJ NO: 140347	DRAWN: MW	PROJECT NAME: Yellowstone Mtn Club
	LOCATION	PROJ MGR: PC	
	SCALE: 1"=3000'	CHECKED: APPVD:	DRAWING TITLE: Moose Lake Road Culvert
	FILE NAME: YMC.dwg	DATE: Dec/20/2003	SHEET 1 OF - REV -

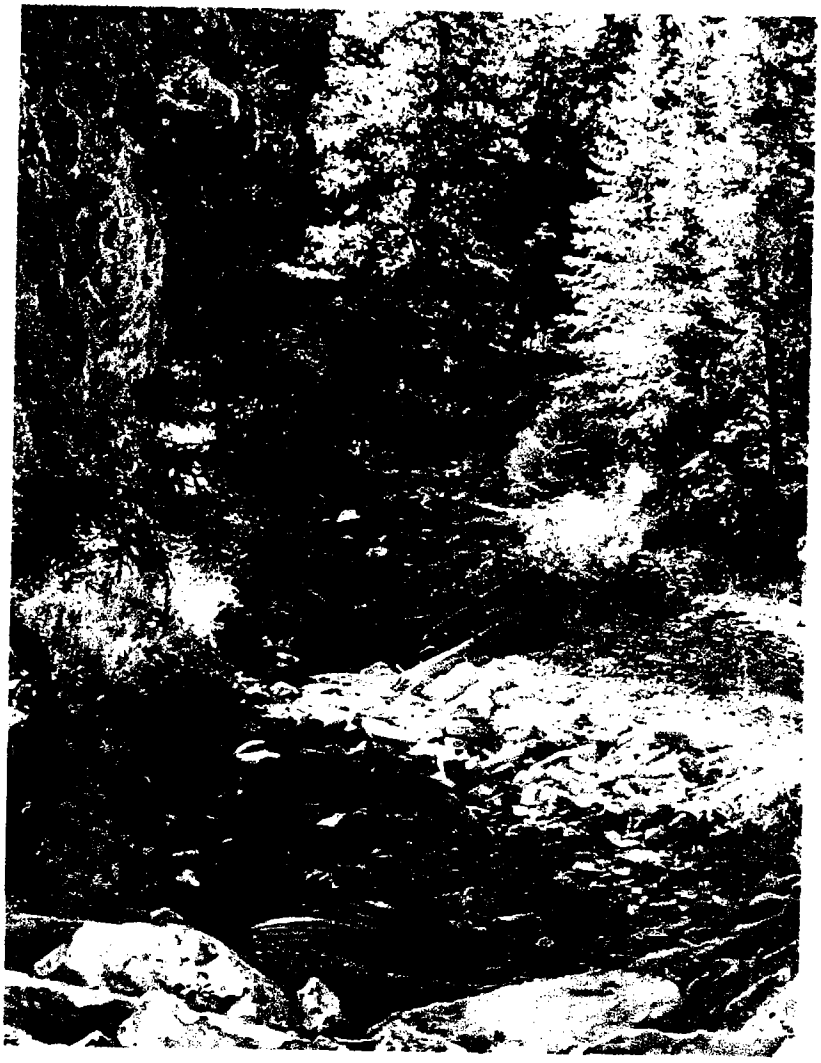


LAND & WATER CONSULTING, INC.
P.O. BOX 8254
Missoula MT 59807

PROJECT NO 140347	DATE 09/30/03	LOCATION Big Sky, MT	PROJECT NAME Yellowstone Mountain Club
PROJECT MANAGER P.C.	SCALE 1" = 5000'	FILE NAME topo 2nd YM	DRAWING TITLE 2nd Yellow Mule Project Location Map
DRAWN BY SD	CHECKED	FIGURE 1	

Photograph No. 1: 2nd Yellow Mule Creek, upstream of culvert crossing. 60" CMP.

Photograph No. 2: 2nd Yellow Mule Creek, downstream of culvert crossing.



Photograph No. 3: 2nd Yellow Mule Creek, view from roadway looking upstream.

Second Yellow Mule Creek
Hydrology Calculations
10/13/2003

USGS Regression Equations
(Analysis of the Magnitude and Frequency of Floods...in Montana WRIR 92-4048)

Upper Yellowstone - Central Mountain Region

$Q_2=0.117A^{0.85} \times (E/1000)^{3.57} \times (HE+10)^{-0.57}$
$Q_{10}=2.71A^{0.77} \times (E/1000)^{3.36} \times (HE+10)^{-0.94}$
$Q_{25}=8.54A^{0.74} \times (E/1000)^{3.16} \times (HE+10)^{-1.03}$

A=drainage area (sq mi)
E=mean basin elevation (ft)
HE=% of basin > 6000ft

A=	4.51	sq mi
E=	8200	ft
HE=	100	%

Q_2=	52.84	cfs
Q_{10}=	122.52	cfs
Q_{25}=	158.70	cfs

2nd Yellow Mule

Method	Estimated Scour Depth (m)	
	Minimum	Maximum
Regime Scour Depth	-0.5	-0.3
Neill's Equation	0.1	0.3
USBR's Modification of Lacey's Equation	0.1	0.4
USBR's Modification of Blench Equation	0.2	0.5
Competent Velocity Method	-0.2	1.1
Field Measurements of Scour Method	1.0	
Average Value	**0.2**	

Method	Estimated Scour Depth (ft)	
	Minimum	Maximum
Regime Scour Depth	-1.6	-1.1
Neill's Equation	0.4	0.9
USBR's Modification of Lacey's Equation	0.2	1.2
USBR's Modification of Blench Equation	0.8	1.6
Competent Velocity Method	-0.8	3.7
Field Measurements of Scour Method	3.3	
Average Value	**0.8**	

Regime Scour Depth (Davis and Sorensen, 1970)

LEGEND	
	User Input
	Excel Output

$$d_s = x * 0.473 (Q / f)^{0.333} - D$$

Where:

Q =	4.5392	design discharge (m^3/s)
f =	19.68	Lacey's silt factor = $1.76 * (d_m)^{0.5}$
d_{50} =	125	channel bed sediment size (mm) that which 50% of the material is finer
D =	0.9144	average water depth in channel (m)

d_s = scour depth below the channel bed (m)
x = multiplying factor varying from 1.5 to 2.0 depending on severity of flow concentration

w/ x =	1.5	w/ x =	2
d_s =	-0.48 m	d_s =	-0.33 m

Nelli's Equation (USBR, 1984)

$$d_s = x * d_i (q_f / q_i)^n$$

Where:

d_i =	0.9144	average water depth in incised channel reach at bankfull discharge (m)
q_i =	0.302613	design discharge per unit channel width (m^2/s)
q_i =	1.27665	bankfull discharge in incised reach per unit channel width (m^2/s)
n =	0.85	is an exponent varying from 0.67 for sand bed to 0.85 for coarse gravel bed channels

d_s = scour depth below the channel bed (m)
x = multiplying factor varying from 0.5 to 1.0

w/ x =	0.5	w/ x =	1
d_s =	0.13 m	d_s =	0.27 m

USBR's Modification of Lacey's Equation (USBR, 1984)

$$d_s = x * 0.473 (Q / f)^{0.2333}$$

Where:

Q =	4.5392	design discharge (m^3/s)
f =	19.68	Lacey's silt factor = $1.76 * (d_m)^{0.5}$
d_{50} =	125	channel bed sediment size (mm) that which 50% of the material is finer

d_s = scour depth below the channel bed (m)
x = multiplying factor varying from 0.25 to 1.25 depending on severity of flow concentration near the bank toe

w/ x =	0.25	w/ x =	1.25
d_s =	0.07 m	d_s =	0.36 m

USBR's Modification of Blench Equation (USBR, 1984)

$$d_s = x * (q_f^{0.67} / F_b^{0.33})$$

Where:

q_f = 0.302613 design discharge per unit channel width (m ^{2}/s)

F_b = 1.55 zero bed factor varying from 0.37 for d_{50} (of channel bed) = 0.30 mm to 0.8 for d_{50} = 3.0 mm, 1.4 for d_{50} = 30 mm, and 3.0 for d_{50} = 1,000 mm

d_s = scour depth below the channel bed (m)

x = multiplying factor varying from 0.6 to 1.25 depending on severity of flow concentration near the bank toe

w/ x = 0.6 d_s = 0.23 m

w/ x = 1.25 d_s = 0.49 m

Competent Velocity Method (USBR, 1984)

$$d_s = D [(V_a / V_c) - 1]$$

Where:

V_a = 1.34112 average channel velocity (m/s)

D = 0.9144 average water depth in channel (m)

d_s = scour depth below the channel bed (m)

V_c = competent velocity (m/s) varying from 0.6 to 1.8 m/s for D = 1.5m, 0.65 to 2.0 m/s for D = 3.0m, 0.7 to 2.3 m/s for D = 6.0m, and 0.8 to 2.6 m/s for D = 15m. Lower values of V_c pertain to easily erodible bed material and higher values to erosion resistant bed material.

w/ V_c = 1.8 d_s = -0.23 m

w/ V_c = 0.6 d_s = 1.13 m

Field Measurements of Scour Method (USBR, 1984)

$$d_s = 1.32 (q_f)^{0.24}$$

Where:

q_f = 0.302613 design discharge per unit channel width (m ^{2}/s)

d_s = 0.99 scour depth below the channel bed (m)

HY-8 output page 1

2nd Yellow Mule Creek
Existing 5' CMP
CURRENT DATE: 10-06-2003
CURRENT TIME: 16:49:02

Existing 60" culvert

1

FILE DATE: 10-06-2003
FILE NAME: 2YM5FT

FHWA CULVERT ANALYSIS
HY-8, VERSION 6.1

CULV NO.	SITE DATA: INLET ELEV. (ft)	SITE DATA: OUTLET ELEV. (ft)	SITE DATA: CULVERT LENGTH (ft)	CULVERT SHAPE, MATERIAL, INLET: BARRELS SHAPE MATERIAL	SPAN (ft)	RISE (ft)	MANNING n	INLET TYPE
1	100.00	96.00	100.08	1 CSP	5.00	5.00	.024	CONVENTIONAL
2								
3								
4								
5								
6								

SUMMARY OF CULVERT FLOWS (cfs) FILE: 2YM5FT DATE: 10-06-2003

ELEV (ft)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
100.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	1
101.59	16.0	16.0	0.0	0.0	0.0	0.0	0.0	0.00	1
102.25	32.0	32.0	0.0	0.0	0.0	0.0	0.0	0.00	1
102.83	48.0	48.0	0.0	0.0	0.0	0.0	0.0	0.00	1
103.37	64.0	64.0	0.0	0.0	0.0	0.0	0.0	0.00	1
103.88	80.0	80.0	0.0	0.0	0.0	0.0	0.0	0.00	1
104.39	96.0	96.0	0.0	0.0	0.0	0.0	0.0	0.00	1
104.92	112.0	112.0	0.0	0.0	0.0	0.0	0.0	0.00	1
105.29	123.0	123.0	0.0	0.0	0.0	0.0	0.0	0.00	1
106.07	144.0	144.0	0.0	0.0	0.0	0.0	0.0	0.00	1
106.72	160.0	160.0	0.0	0.0	0.0	0.0	0.0	0.00	1
110.00	222.9	222.9	0.0	0.0	0.0	0.0	0.0	OVERTOPPING	

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: 2YM5FT DATE: 10-06-2003

HEAD ELEV (ft)	HEAD ERROR (ft)	TOTAL FLOW (cfs)	FLOW ERROR (cfs)	% FLOW ERROR
100.00	0.000	0.00	0.00	0.00
101.59	0.000	16.00	0.00	0.00
102.25	0.000	32.00	0.00	0.00
102.83	0.000	48.00	0.00	0.00
103.37	0.000	64.00	0.00	0.00
103.88	0.000	80.00	0.00	0.00
104.39	0.000	96.00	0.00	0.00
104.92	0.000	112.00	0.00	0.00
105.29	0.000	123.00	0.00	0.00
106.07	0.000	144.00	0.00	0.00
106.72	0.000	160.00	0.00	0.00

<1> TOLERANCE (ft) = 0.010 <2> TOLERANCE (%) = 1.000

HY-8 output page 2

CURRENT DATE: 10-06-2003
CURRENT TIME: 16:49:02

FILE DATE: 10-06-2003
FILE NAME: 2YMSFT

PERFORMANCE CURVE FOR CULVERT 1 - 1(5.00 (ft) BY 5.00 (ft)) CSP

DIS-CHARGE FLOW (cfs)	HEAD-WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW TYPE <F4>	NORMAL DEPTH (ft)	CRIT. DEPTH (ft)	OUTLET DEPTH (ft)	TW DEPTH (ft)	OUTLET VEL. (fps)	TW VEL. (fps)
0.00	100.00	0.00	0.00	0-NF	0.00	0.00	0.00	1.00	0.00	0.00
16.00	101.59	1.59	1.59	1-S2n	0.77	1.09	0.69	1.00	9.52	0.00
32.00	102.25	2.25	2.25	1-S2n	1.12	1.56	1.06	1.00	10.42	0.00
48.00	102.83	2.83	2.83	1-S2n	1.38	1.93	1.33	1.00	11.34	0.00
64.00	103.37	3.37	3.37	1-S2n	1.61	2.24	1.54	1.00	12.47	0.00
80.00	103.88	3.88	3.88	1-S2n	1.81	2.53	1.73	1.00	13.23	0.00
96.00	104.39	4.39	4.39	1-S2n	2.01	2.78	2.03	1.00	12.88	0.00
112.00	104.92	4.92	4.92	1-S2n	2.18	3.02	2.12	1.00	14.14	0.00
123.00	105.29	5.29	5.29	5-S2n	2.30	3.16	2.33	1.00	13.70	0.00
144.00	106.07	6.07	6.07	5-S2n	2.53	3.43	2.56	1.00	14.21	0.00
160.00	106.72	6.72	6.72	5-S2n	2.69	3.62	2.74	1.00	14.56	0.00

El. inlet face invert 100.00 ft El. outlet invert 96.00 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

***** SITE DATA ***** CULVERT INVERT **********

INLET STATION	0.00 ft
INLET ELEVATION	100.00 ft
OUTLET STATION	100.00 ft
OUTLET ELEVATION	96.00 ft
NUMBER OF BARRELS	1
SLOPE (V/H)	0.0400
CULVERT LENGTH ALONG SLOPE	100.08 ft

***** CULVERT DATA SUMMARY **********

BARREL SHAPE	CIRCULAR
BARREL DIAMETER	5.00 ft
BARREL MATERIAL	CORRUGATED STEEL
BARREL MANNING'S n	0.024
INLET TYPE	CONVENTIONAL
INLET EDGE AND WALL	THIN EDGE PROJECTING
INLET DEPRESSION	NONE

HY-8 output page 3

CURRENT DATE: 10-06-2003
CURRENT TIME: 16:49:02

FILE DATE: 10-06-2003
FILE NAME: 2YM5FT

TAILWATER

CONSTANT WATER SURFACE ELEVATION
97.00

ROADWAY OVERTOPPING DATA

ROADWAY SURFACE	GRAVEL
EMBANKMENT TOP WIDTH	20.00 ft
CREST LENGTH	100.00 ft
OVERTOPPING CREST ELEVATION	110.00 ft

HY-8 output page 4

2nd Yellow Mule Creek 1
New Proposed 12' Bottomless Arch
CURRENT DATE: 10-06-2003 FILE DATE: 10-06-2003
CURRENT TIME: 16:42:01 FILE NAME: 2YM12FT

Proposed culvert 12' bottomless arch

FHWA CULVERT ANALYSIS
HY-8, VERSION 6.1

CULV NO.	SITE DATA: INLET ELEV. (ft)	SITE DATA: OUTLET ELEV. (ft)	SITE DATA: CULVERT LENGTH (ft)	CULVERT SHAPE, MATERIAL, INLET: BARRELS / SHAPE / MATERIAL	SPAN (ft)	RISE (ft)	MANNING n	INLET TYPE
1	100.00	94.00	100.18	1 C3A	12.00	5.00	.035	CONVENTIONAL
2								
3								
4								
5								
6								

SUMMARY OF CULVERT FLOWS (cfs) FILE: 2YM12FT DATE: 10-06-2003

ELEV (ft)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
100.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	1
100.55	16.0	16.0	0.0	0.0	0.0	0.0	0.0	0.00	1
101.09	32.0	32.0	0.0	0.0	0.0	0.0	0.0	0.00	1
101.43	48.0	48.0	0.0	0.0	0.0	0.0	0.0	0.00	1
101.73	64.0	64.0	0.0	0.0	0.0	0.0	0.0	0.00	1
102.02	80.0	80.0	0.0	0.0	0.0	0.0	0.0	0.00	1
102.29	96.0	96.0	0.0	0.0	0.0	0.0	0.0	0.00	1
102.54	112.0	112.0	0.0	0.0	0.0	0.0	0.0	0.00	1
102.72	123.0	123.0	0.0	0.0	0.0	0.0	0.0	0.00	1
103.07	144.0	144.0	0.0	0.0	0.0	0.0	0.0	0.00	1
103.33	160.0	160.0	0.0	0.0	0.0	0.0	0.0	0.00	1
110.00	532.2	532.2	0.0	0.0	0.0	0.0	0.0	OVERTOPPING	

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: 2YM12FT DATE: 10-06-2003

HEAD ELEV (ft)	HEAD ERROR (ft)	TOTAL FLOW (cfs)	FLOW ERROR (cfs)	% FLOW ERROR
100.00	0.000	0.00	0.00	0.00
100.55	0.000	16.00	0.00	0.00
101.09	0.000	32.00	0.00	0.00
101.43	0.000	48.00	0.00	0.00
101.73	0.000	64.00	0.00	0.00
102.02	0.000	80.00	0.00	0.00
102.29	0.000	96.00	0.00	0.00
102.54	0.000	112.00	0.00	0.00
102.72	0.000	123.00	0.00	0.00
103.07	0.000	144.00	0.00	0.00
103.33	0.000	160.00	0.00	0.00

<1> TOLERANCE (ft) = 0.010 <2> TOLERANCE (%) = 1.000

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CURRENT DATE: 10-06-2003
CURRENT TIME: 16:42:01

FILE DATE: 10-06-2003
FILE NAME: 2YM12FT

PERFORMANCE CURVE FOR CULVERT 1 - 1(12.00 (ft) BY 5.00 (ft)) CSA

DIS-CHARGE FLOW (cfs)	HEAD-WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW TYPE <F4>	NORMAL DEPTH (ft)	CRIT. DEPTH (ft)	OUTLET DEPTH (ft)	TW DEPTH (ft)	OUTLET VEL. (fps)	TW VEL. (fps)
0.00	100.00	0.00	0.00	0-NF	0.00	0.00	0.00	1.00	0.00	0.00
16.00	100.55	0.55	0.55	1-S2n	0.22	0.33	0.13	1.00	5.80	0.00
32.00	101.09	1.09	1.09	1-S2n	0.44	0.59	0.29	1.00	6.52	0.00
48.00	101.43	1.43	1.43	1-S2n	0.58	0.78	0.48	1.00	8.11	0.00
64.00	101.73	1.73	1.73	1-S2n	0.69	0.96	0.66	1.00	8.22	0.00
80.00	102.02	2.02	2.02	1-S2n	0.80	1.11	0.71	1.00	9.54	0.00
96.00	102.29	2.29	2.29	1-S2n	0.92	1.26	0.86	1.00	9.56	0.00
112.00	102.54	2.54	2.54	1-S2n	1.02	1.40	0.90	1.00	10.63	0.00
123.00	102.72	2.72	2.72	1-S2n	1.08	1.50	1.00	1.00	10.53	0.00
144.00	103.07	3.07	3.07	1-S2n	1.20	1.66	1.16	1.00	10.70	0.00
160.00	103.33	3.33	3.33	1-S2n	1.29	1.78	1.18	1.00	11.69	0.00

El. inlet face invert 100.00 ft El. outlet invert 94.00 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

```
***** SITE DATA ***** CULVERT INVERT **************
      INLET STATION                          0.00 ft
      INLET ELEVATION                      100.00 ft
      OUTLET STATION                       100.00 ft
      OUTLET ELEVATION                      94.00 ft
      NUMBER OF BARRELS                     1
      SLOPE (V/H)                           0.0600
      CULVERT LENGTH ALONG SLOPE          100.18 ft

***** CULVERT DATA SUMMARY ************************
      BARREL SHAPE            ARCH
      BARREL SPAN              12.00 ft
      BARREL RISE               5.00 ft
      BARREL MATERIAL         STEEL STRUCTURAL PLATE
      BARREL MANNING'S n      0.035 FOR SIDES AND TOP
                              0.035 FOR BOTTOM
      INLET TYPE              CONVENTIONAL
      INLET EDGE AND WALL     THIN EDGE PROJECTING
      INLET DEPRESSION        NONE
```

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CURRENT DATE: 10-06 2003
CURRENT TIME: 16:42:01

FILE DATE: 10-06-2003
FILE NAME: ZYM12FT

TAILWATER

CONSTANT WATER SURFACE ELEVATION
95.00

ROADWAY OVERTOPPING DATA

ROADWAY SURFACE	GRAVEL
EMBANKMENT TOP WIDTH	20.00 ft
CREST LENGTH	100.00 ft
OVERTOPPING CREST ELEVATION	110.00 ft

APPENDIX D

Appendix D
to Consent Decree
List of Non-Stormwater Culverts to Remain in Place[1]

Culvert No.	Sec.	Township	WL/BB Above	WL/BB Below	Length[2] (feet)	Diameter[2] (inches)	Notes
AN043	1	T7S R2E	W12-02	W302-02			
BA001	7	T7S R3E	W45	W45			
BA002	7	T7S R3E	W324-02	W324-02			
EG001	12	T7S R2E	None	W27			
EG002	18	T7S R2E	W618-03	W618-03			
EG003	13	T7S R2E	W608-03	W608-03			
EG004	13	T7S R2E	W608-03	W608-03			
EG005	13	T7S R2E	W608-03	W608-03			
EG006	13	T7S R2E	W608-03	W608-03			
EG007	13	T7S R2E	W608-03	W608-03			
EG008	13	T7S R2E	W608-03	W608-03			
EG009	13	T7S R2E	W607-03	W607-03			
EG010	13	T7S R2E	W605-03	W605-03			
EG011	13	T7S R2E	W603-03	None			
EG012	13	T7S R2E	W602-03	None			
GC028	7	T7S R3E	W40-02	W40-02			
GC030	7	T7S R3E	W41	W41			
GC031	7	T7S R3E	W41	W41			

[1] This list represents all known non-stormwater culverts projected to remain in place after implementation of the restoration plans contained in Appendices A and B. The list and the information it contains is based upon engineering drawings, consultant information and anecdotal information. The information on this list is subject to field confirmation. The information on this list is not intended to indicate the jurisdictional status of any wetland or culvert.

[2] The United States will complete the length and diameter information for this list and the Consent Decree will be modified to incorporate a complete Appendix D.

Culvert No.	Sec.	Township	WL/BB Above	WL/BB Below	Length[2] (feet)	Diameter[2] (inches)	Notes
GC033	7	T7S R3E	W41	W41			
GC035	8	T7S R3E	W90	W90			
GC037	7	T7S R3E	W88S	W89W			
GC038	18	T7S R2E	W94	W94			
GC039	7	T7S R3E	None	None			
GC041	7	T7S R3E	W88N	W88N			
GC042	7	T7S R3E	LW211	W88N			
LM006	1	T7S R2E	W10-02	LMR01		24	
LM007	1	T7S R2E	W10-02	W10-02			
LM008	1	T7S R2E	BB410	BB410		60	
LM009	1	T7S R2E	BB410	LMR03	210	60	
LM015	2	T7S R2E	BB401	BB401			
LM019	2	T7S R2E	LRM63/BB414	BB403			
LM021	2	T7S R2E	LMR27	LMR48			
LM023	2	T7S R2E	W180	W66			
LM024	2	T7S R2E	W147	W66			
LM025	2	T7S R2E	None	W147			
LM026	2	T7S R2E	BB409	LMR49			
LM028	2	T7S R2E	BB380	W180			Subject to energy dissipation under Appendix E.
LM029	1	T7S R2E	BB402	LMR11			
LM030	1	T7S R2E	LMR11	BB411			
LM031	1	T7S R2E	BB410	BB410			
PM002	11	T7S R2E	WPM-2	WPM-2	60	18	Subject to energy dissipation under Appendix E
PM003	11	T7S R2E	WPM-3	WPM-3	50	18	Subject to energy dissipation under Appendix E
PM004	11	T7S R2E	WPM-4	WPM-3	110		Subject to energy dissipation under Appendix E
PM005	2	T7S R2E	None	None		18	Subject to energy dissipation under Appendix E
PM006	2	T7S R2E	WPM-6	WPM-6	60	24	Subject to energy dissipation under Appendix E

Culvert No.	Sec.	Township	WL/BB Above	WL/BB Below	Length[2] (feet)	Diameter[2] (inches)	Notes
PM007	2	T7S R2E	WPM-8	WPM-8	110		Subject to energy dissipation under Appendix E
PM008	2	T7S R2E	None	WPM-7	110		Subject to energy dissipation under Appendix E
PM009	2	T7S R2E	WPM-19	WPM-9	200	24	Subject to energy dissipation under Appendix E
PM010	2	T7S R2E	WPM-10	WPM-10			
PM011	2	T7S R2E	WPM-10	WPM-11	180		Subject to energy dissipation under Appendix E
PM012	2	T7S R2E	None	WPM-11		18	
PM015	11	T7S R2E	WPM-15	WPM-15	40		Subject to energy dissipation under Appendix E
PM016	11	T7S R2E	WPM-15	WPM-16	40		Subject to energy dissipation under Appendix E.
PM017	11	T7S R2E	WPM-26	WPM-17	40		Subject to energy dissipation under Appendix E.
PM019	11	T7S R2E	WPM-16	WPM-19	240		Subject to energy dissipation under Appendix E.
PM023	1	T7S R2E	WPM-118B	WPM-118B			Subject to energy dissipation under Appendix E. Originally referred to as PM118.
PM025	11	T7S R2E	None	WPM-25			Subject to energy dissipation under Appendix E.
PM030	11	T7S R2E	BB350	BB350			
PM031	12	T7S R2E	WPM-31	WPM-31	100		Subject to energy dissipation under Appendix E.
PM034	12	T7S R2E	WPM-34	WPM-34	90		Subject to energy dissipation under Appendix E.
PM035	12	T7S R2E	WPM-35	WPM-35	40		Subject to energy dissipation under Appendix E.
PM036	12	T7S R2E	WPM-36	WPM-36	220		Subject to energy dissipation under Appendix E.
PM039	12	T7S R2E	WPM-39	WPM-39	90		Subject to energy dissipation under Appendix E.
PM044	11	T7S R2E	None	WPM-44	30		
PM050	11	T7S R2E	WPM-50	WPM-50	60		Subject to energy dissipation under Appendix E.
PM051	12	T7S R2E	WPM-51	WPM-51	140		
PM052	11	T7S R2E	None	WPM-50	30		
PM055	11	T7S R2E	WPM-55	WPM-55	50		Subject to energy dissipation under Appendix E.
PM056	12	T7S R2E	WPM-37	W341			Subject to energy dissipation under Appendix E.
PM057	1	T7S R2E	WPM-120	WPM-120			Subject to energy dissipation under Appendix E. Originally referred to as PM120.
PM058	11	T7S R2E	None	WPM-58	60		Subject to energy dissipation under Appendix E.

Culvert No.	Sec.	Township	WL/BB Above	WL/BB Below	Length[2] (feet)	Diameter[2] (inches)	Notes
PM062	11	T7S R2E	WPM-27	WPM-33			
PM072	2	T7S R2E	BB304	BB357			
R002	17	T7S R2E	W228-02	W228-02			
R003	17	T7S R2E	W343-02	W343-02			
R004	17	T7S R2E	W240-02	W240-02			
R005	17	T7S R2E	W295-02	W240-02			
R006	17	T7S R2E	W341-02	W341-02			
R007	17	T7S R2E	W244-02	None			
R008	17	T7S R2E	W240-02	W240-02			
R009	17	T7S R2E	W250-02	W243-02			
R010	17	T7S R2E	W511-02	W295-02			
R011	17	T7S R2E	W407-03	W407-03			
YC002	5	T7S R3E	W26-02	W29-02			
YC003	5	T7S R3E	W23-02	W28-02	80		
YC008	6	T7S R3E	W14	W14			
YC016	8	T7S R3E	W323-02	W323B-02			
YC018	5	T7S R3E	W35-02	W35-02			
YC022	6	T7S R3E	W23	W23			
YC023	6	T7S R3E	W14	W14			
YC024	6	T7S R3E	W22	W22			
YC028	12	T7S R2E	None	W185			

APPENDIX E

Appendix E
To Consent Decree
Culverts Subject to Energy Dissipation Modification

1. Pursuant to paragraph 22 of the Consent Decree, the United States has reserved the right to inspect the culverts identified in Appendix D and, with respect to such culverts at any time prior to November 30, 2004, identify additional culverts in jurisdictional waters of the United States for which it seeks construction of energy dissipation controls. If YMC agrees with the United States' identification of additional culverts, energy dissipation control work on these additional culverts will be completed by November 30, 2005. Disputes concerning identification of additional culverts or any other items addressed in this Appendix E shall be subject to the Dispute Resolution provisions of the Consent Decree.

2. "Energy dissipation controls" as used in this Consent Decree will generally be accomplished through the placement of rock and/or riprap or conducting such other work at the culverts' outlets, so as to reduce erosion and sediment deposition that might otherwise result from culvert discharges. When YMC determines the energy dissipation controls to place at PM056, YMC will include appropriate stabilization and erosion control measures on the forested slope downstream of culvert PM056 and upstream of the rock scree in accordance with a proposal provided by YMC to EPA for approval.

3. On November 10, 2003, YMC proposed to perform energy dissipation control on the following culverts on Pioneer Mountain: PM002, PM003, PM004, PM006, PM007, PM008, PM009, PM011, PM015, PM016, PM017, PM90019, PM025, PM031, PM034, PM035,

PM036, PM039, PM050, PM055, PM056, PM058, PM118 (now known as PM023), PM120 (now known as PM057), LM025, LM024, LM028, and LM023. In addition, YMC will perform energy dissipation control on culverts PM030, PM044, PM051, and PM052 on Pioneer Mountain. YMC will undertake energy dissipation control work on all of these culverts in 2004.

APPENDIX F

Appendix F
to Consent Decree

CONSULTING SERVICES AGREEMENT

This agreement is made and entered into as of the _____ day of _____, 2004, by and between YELLOWSTONE DEVELOPMENT, LLC and YELLOWSTONE MOUNTAIN CLUB, LLC, (collectively, "YMC") of P.O. Box 161097, Big Sky, MT 59716, and CLAFFEY ECOLOGICAL CONSULTING, ("Claffey") of 1371 17 Road, Fruita, CO 81521.

RECITALS

A. YMC is party to a Consent Decree (the "Consent Decree") with the United States of America filed in the United States District Court for the District of Montana (Civil Action No. CV03-___-___-___). The Consent Decree pertains to YMC's property in Madison County, Montana (the "Site").

B. Pursuant to Paragraph 28 of the Consent Decree, YMC is required to retain a third-party independent contractor to serve as Technical Expert for monitoring to oversee performance of actions required in the Consent Decree.

C. YMC and the United States have identified Claffey to perform the Technical Expert duties identified in the Consent Decree and Claffey has agreed to perform such duties, subject to the terms and conditions of this Agreement.

THEREFORE, the parties agree as follows:

AGREEMENT

1. **Services.** YMC retains Claffey to perform the Technical Expert services (the "Services") set forth in the Consent Decree.

2. **Standard.** Claffey agrees to perform the Services using sound and professional principles and practices in accordance with normally accepted industry standards, and that performance shall reflect Claffey's best professional knowledge, skill and judgment.

3. **Consideration.**

3.1 In consideration for the satisfactory performance of the Services, YMC shall pay Claffey for all Services at the rates set forth in Exhibit A to this Agreement.

3.2 Claffey is not authorized to perform Services, make expenditures or incur obligations that exceed $35,000 during the first calendar year that YMC commences

work under the Consent Decree, $35,000 during the subsequent year, and $15,000 per year during the third, fourth or fifth year after YMC commences work.

3.3 Claffey will invoice YMC once per month for Services performed during the preceding month. All invoices shall include a description of the Services performed, an itemization of all expenses incurred and supporting documentation. Payment will be due within 30 days of YMC's receipt of a proper invoice.

3.4 In the event of a disputed or contested billing, only that portion so contested will be withheld from payment, and YMC shall pay the undisputed portion. YMC will exercise reasonableness in contesting any billing.

4. **Term and Termination.**

4.1 The Agreement shall commence on the date it is executed by both parties and shall continue in effect until the date the Services have been performed and all payments have been received, unless sooner terminated by either party, with or without cause, by 30 days written notice to the other. In the event the Services commence prior to the date of execution of this Agreement, this Agreement shall be effective retroactively to the date the Services were commenced.

4.2 Upon termination of this Agreement, Claffey shall prepare a final invoice for all unpaid Services incurred to the date of termination and YMC shall pay such invoice pursuant to the terms of this Agreement.

5. **Status.** Claffey understands that Claffey's status under this Agreement is that of independent contractor. Claffey is not considered an employee of YMC in the performance of Services and is not entitled to any employee benefits, statutory or otherwise, including, but not limited to, workers' compensation or unemployment compensation. Claffey agrees that YMC will not deduct income, social security or other taxes on any payments to Claffey hereunder. Claffey further agrees that Claffey is solely responsible for payment of any such taxes due to the proper taxing authorities. Claffey shall indemnify and hold YMC harmless from any assessments such as taxes and any interest and penalties imposed upon YMC by reasons of the Claffey's failure to pay such taxes.

6. **Subcontractors.** Claffey may not subcontract any portion of the Services without YMC's written consent and approval of the subcontractor. In the event that Claffey desires to subcontract any portion of the Services, Claffey shall provide YMC with the name and qualifications of the proposed subcontractor and a description of the aspect of the Services proposed to be subcontracted. Without otherwise limiting this section, YMC approves Rich McEldowney, an employee of SAIC, as a subcontractor.

7. **Compliance with Laws.** Claffey shall provide the Services in full compliance with all applicable federal, state and local laws, and YMC rules and regulations provided to Claffey.

8. **Insurance.** Claffey shall at all times carry: (a) workers' compensation and employer's liability insurance in amounts required by Montana law, (b) professional liability insurance with limits of not less than $1,000,000 per occurrence, (c) comprehensive general liability insurance (personal injury and property damage) with limits of not less than $2,000,000 per occurrence, and (d) automobile liability insurance (including coverage for owned, leased, used, hired, or borrowed vehicles) with a combined single limit for both bodily injury and property damage of not less than $1,000,000 per occurrence. YMC is to be named as an additional insured with respect to insurance policies. Upon request, Claffey will produce for YMC certificates evidencing the insurance required by this Agreement.

9. **Indemnity.** Claffey agrees that any personal injury to Claffey, third parties or any property damage resulting solely from performances of Services by Claffey shall be the responsibility of Claffey. Claffey will indemnify and hold YMC harmless for any claims, demands, lawsuits, or award of damages arising out of Claffey's performance of Services, except to the extent such are caused by the sole fault or negligence of YMC. This provision shall survive termination of this Agreement.

10. **Contracts.** In the performance of Services, Claffey shall not have the authority to enter into any contract or agreement to bind YMC and shall not represent to anyone that Claffey has such authority.

11. **Property Access and Responsibility.**

11.1 Claffey shall have authority at all reasonable times with 24 hours notice to enter the Site for purposes of performing the Services. Access shall be limited to persons previously identified by Claffey to YMC.

11.2 YMC also shall provide Claffey with copies of all plans and other documentation in its possession necessary for Claffey to perform the Services.

11.3 Claffey shall be responsible for its own activities on the Site, including the safety of its employees and subcontractors. Claffey also shall follow all YMC safety rules and other rules applicable to contractors that perform work on the Site, so long as such rules pertain to Services and are provided to Claffey prior to performance of the Services.

12. **Third Parties.** Claffey represents and warrants to YMC that in performing services, Claffey will not be in breach of any agreement with a third party.

13. **Assignment.** Claffey may not assign the rights or obligations under this Agreement without YMC's prior written consent.

14. **Entire Agreement.** This Agreement contains the entire understanding with respect to its subject matter and may not be amended except by a written agreement executed by Claffey and an authorized official of YMC.

15. **Consistency with Consent Decree.** To the extent that any provision of this Agreement is inconsistent with the Consent Decree, the terms of the Consent Decree shall control.

16. **Governing Law and Venue.** This Agreement shall be construed in accordance with Montana law. Jurisdiction for any dispute or claim raised under this Agreement or proceeding brought to interpret the Agreement shall lie solely in the State of Montana, with venue in Madison County.

17. **Counterparts.** This Agreement, plus any modifications, may be executed by the parties in counterparts, each of which when executed and delivered shall be an original, but all of which together shall constitute one and the same instrument. Facsimile copies of signatures will be deemed the equivalent of original signatures. Each party agrees to fully execute with original signatures on all original documents following execution of facsimile transmitted.

YMC:

YELLOWSTONE DEVELOPMENT, LLC

and

YELLOWSTONE MOUNTAIN CLUB, LLC

Dated:_____ By:_____
Name: Robert Sumpter
Title: Vice President, Development

CLAFFEY:

CLAFFEY ECOLOGICAL CONSULTING,

Dated:_____ By:_____
Name:_____
Title:_____

EXHIBIT A

SCHEDULE OF RATES

Appendix G
To Consent Decree
Summary of Potential Impact Sites Not Included in Appendices A and B

General Location	Description	Ref. No.	Section	Township	WL/BB	EPA Ref. No.	Jurisdictional Status[1]	Notes
Andesite	Road bisecting wetland near entrance gatehouse	2001	5	T7S, R3E	W323B-02		TBD	
Andesite	Andesite road east of lot 26	2002	5	T7S, R3E	W20-02		Nonjurisdictional	
Andesite	Andesite Ridge road near first switchback	2003	5	T7S, R3E	W16-02		Nonjurisdictional	
Andesite	Yellowstone Club Trail north of lot 8	2004	6	T7S, R3E	W-19		Nonjurisdictional	
Andesite	West of lot 255	2005	1	T7S, R2E	W12-02		Jurisdictional	Associated with Andesite French Drain 04
Andesite	West of Lot 9	2006	6	T7S, R3E	W23, W-14, W-22, W311-02		Jurisdictional	Wetlands cross old logging road. Potential impacts from historic logging.
Andesite	Andesite French drain 01	2007	5	T7S R3E	W15-02		Nonjurisdictional	Identified in Block 8 of April 2002 individual permit application.
Andesite	Andesite French drain 03	2008	5	T7S R3E	W13-02		Jurisdictional	Identified in Block 8 of April 2002 individual permit application.
Andesite	Andesite French drain 04	2009	1	T7S R3E	W12-02, W302-02		Jurisdictional	Identified in Block 8 of April 2002 individual permit application.
Base Area	Cabin road near Club cabin	2010	12	T7S, R2E	W503-02	1081	Nonjurisdictional	

[1] Jurisdictional status references are provided as a courtesy and do not constitute final determinations of jurisdiction nor a waiver of defense or other position regarding Clean Water Act jurisdiction. Locations designated as "jurisdictional" reflect a view that the U.S. would likely consider the location as within Clean Water Act jurisdiction. Locations designated as "TBD" reflect additional work necessary by delineation contractors to determine jurisdiction.. Locations designated as nonjurisdictional reflect a view that U.S. would likely agree that the location was not within Clean Water Act jurisdiction.

General Location	Description	Ref. No.	Section	Township	WL/BB	EPA Ref. No.	Jurisdictional Status[1]	Notes
Base Area	Muddy Creek ford and old logging road bridge	2011	7	T7S, R3E	W50 / Muddy Cr.		Jurisdictional	Identified by EPA, DEQ and COE in Fall 2000.
Ranches	Near east boundary on Ranches road	2012	8	T7S, R3E	W502-02		Nonjurisdictional	Wetland impact on Ranches road identified by EPA.
Ranches	Second Yellow Mule Creek	2013	8	T7S, R3E	Second Yellow Mule Creek		Jurisdictional	Rocks allegedly remaining in creek downstream from bridge. MDEQ site 7.
South Fork	Confluence with drainage north of golf course	2014	8	T7S, R3E	South Fork		Probably jurisdictional	Drainage north of culvert GC006; documented by MDEQ in September 2001.
Andesite lift	General area below lower Andesite lift	2015	1	T7S, R3E	W301-02, W10-02,		Jurisdictional	MDEQ remediation site 2.
Moose Lake Road	Below culvert no. LM006	2016	1	T7S, R3E	LMR01		Jurisdictional	MDEQ remediation site 1; identified in Phase 3 report
Moose Lake Road	Switchback	2017	1	T7S, R3E	LMR05		Jurisdictional	MDEQ remediation site 3; identified in Phase 3 report
S. Fork, northeast of lower American Spirit lift	Slump identified by MDEQ	2018	1	T7S, R3E	South Fork			MDEQ remediation site 4
Moose Lake Road	Upgradient from culvert LM021	2019	2	T7S, R2E	LMR027	1091	Nonjurisdictional	Identified in Phase 3 report
Moose Lake Road	Downgradient from culvert LM021	2020	2	T7S, R2E	LMR048	1091	Nonjurisdictional	Identified in Phase 3 report
Moose Lake Road	Road impact to wetland	2021	2	T7S, R2E	LMR046		Nonjurisdictional	Identified in Phase 3 report
Moose Lake Road	Road slump into wetland	2022	2	T7S, R2E	W66	1089	Jurisdictional	Associated with culvert LM023
Improved logging road	Old road to phase 3	2023	1	T7S, R3E	LMR60		Jurisdictional	Identified in Phase 3 report
Backtrack Road	Road crossing wetland	2024	10	T7S, R2E	Not assigned	1083	Unknown	Backtrack road crossing various wetland.
Backtrack Road	Road crossing wetland	2025	10	T7S, R2E	Not assigned	1084	Unknown	Backtrack road crossing various wetland.

General Location	Description	Ref. No.	Section	Township	WL/BB	EPA Ref. No.	Jurisdictional Status[1]	Notes
Backtrack Road	Road crossing wetland	2026	10	T7S, R2E	Not assigned	1085	Unknown	Backtrack road crossing various wetland.
Backtrack Road	Road crossing wetland	2027	10	T7S, R2E	Not assigned	1086	Unknown	Backtrack road crossing various wetland.
Backtrack Road	Road crossing wetland	2028	10	T7S, R2E	Not assigned	1087	Unknown	Backtrack road crossing various wetland.
Backtrack Road	Road crossing wetland	2029	10	T7S, R2E	Not assigned	1088	Unknown	Backtrack road crossing various wetland.
Base Area	South Fork year 2000 temporary diversion	2030	7	T7S, R2E	Not assigned		Jurisdictional	Temporary diversion identified by MDFWP in Fall 2000.
Base Area	Road east of Camp Blixseth	2031	7	T7S, R2E	W-45A		Jurisdictional	Possible road impacts to wetland

APPENDIX G

Appendix G
To Consent Decree
Summary of Potential Impact Sites Not Included in Appendices A and B

General Location	Description	Ref. No.	Section	Township	WL/BB	EPA Ref. No.	Jurisdictional Status[1]	Notes
Andesite	Road bisecting wetland near entrance gatehouse	2001	5	T7S, R3E	W323B-02		TBD	
Andesite	Andesite road east of lot 26	2002	5	T7S, R3E	W20-02		Nonjurisdictional	
Andesite	Andesite Ridge road near first switchback	2003	5	T7S, R3E	W16-02		Nonjurisdictional	
Andesite	Yellowstone Club Trail north of lot 8	2004	6	T7S, R3E	W-19		Nonjurisdictional	
Andesite	West of lot 255	2005	1	T7S, R2E	W12-02		Jurisdictional	Associated with Andesite French Drain 04
Andesite	West of Lot 9	2006	6	T7S, R3E	W23, W-14, W-22, W311-02		Jurisdictional	Wetlands cross old logging road. Potential impacts from historic logging.
Andesite	Andesite French drain 01	2007	5	T7S R3E	W15-02		Nonjurisdictional	Identified in Block 8 of April 2002 individual permit application.
Andesite	Andesite French drain 03	2008	5	T7S R3E	W13-02		Jurisdictional	Identified in Block 8 of April 2002 individual permit application.
Andesite	Andesite French drain 04	2009	1	T7S R3E	W12-02, W302-02		Jurisdictional	Identified in Block 8 of April 2002 individual permit application.
Base Area	Cabin road near Club cabin	2010	12	T7S, R2E	W503-02	1081	Nonjurisdictional	

[1] Jurisdictional status references are provided as a courtesy and do not constitute final determinations of jurisdiction nor a waiver of defense or other position regarding Clean Water Act jurisdiction. Locations designated as "jurisdictional" reflect a view that the U.S. would likely consider the location as within Clean Water Act jurisdiction. Locations designated as "TBD" reflect additional work necessary by delineation contractors to determine jurisdiction.. Locations designated as nonjurisdictional reflect a view that U.S. would likely agree that the location was not within Clean Water Act jurisdiction.

General Location	Description	Ref. No.	Section	Township	WL/BB	EPA Ref. No.	Jurisdictional Status[1]	Notes
Base Area	Muddy Creek ford and old logging road bridge	2011	7	T7S, R3E	W50 / Muddy Cr.		Jurisdictional	Identified by EPA, DEQ and COE in Fall 2000.
Ranches	Near east boundary on Ranches road	2012	8	T7S, R3E	W502-02		Nonjurisdictional	Wetland impact on Ranches road identified by EPA.
Ranches	Second Yellow Mule Creek	2013	8	T7S, R3E	Second Yellow Mule Creek		Jurisdictional	Rocks allegedly remaining in creek downstream from bridge. MDEQ site 7.
South Fork	Confluence with drainage north of golf course	2014	8	T7S, R3E	South Fork		Probably jurisdictional	Drainage north of culvert GC006; documented by MDEQ in September 2001.
Andesite lift	General area below lower Andesite lift	2015	1	T7S, R3E	W301-02, W10-02,		Jurisdictional	MDEQ remediation site 2.
Moose Lake Road	Below culvert no. LM006	2016	1	T7S, R3E	LMR01		Jurisdictional	MDEQ remediation site 1; identified in Phase 3 report
Moose Lake Road	Switchback	2017	1	T7S, R3E	LMR05		Jurisdictional	MDEQ remediation site 3; identified in Phase 3 report
S. Fork, northeast of lower American Spirit lift	Slump identified by MDEQ	2018	1	T7S, R3E	South Fork			MDEQ remediation site 4
Moose Lake Road	Upgradient from culvert LM021	2019	2	T7S, R2E	LMR027	1091	Nonjurisdictional	Identified in Phase 3 report
Moose Lake Road	Downgradient from culvert LM021	2020	2	T7S, R2E	LMR048	1091	Nonjurisdictional	Identified in Phase 3 report
Moose Lake Road	Road impact to wetland	2021	2	T7S, R2E	LMR046		Nonjurisdictional	Identified in Phase 3 report
Moose Lake Road	Road slump into wetland	2022	2	T7S, R2E	W66	1089	Jurisdictional	Associated with culvert LM023
Improved logging road	Old road to phase 3	2023	1	T7S, R3E	LMR60		Jurisdictional	Identified in Phase 3 report
Backtrack Road	Road crossing wetland	2024	10	T7S, R2E	Not assigned	1083	Unknown	Backtrack road crossing various wetland.
Backtrack Road	Road crossing wetland	2025	10	T7S, R2E	Not assigned	1084	Unknown	Backtrack road crossing various wetland.

General Location	Description	Ref. No.	Section	Township	WL/BB	EPA Ref. No.	Jurisdictional Status[1]	Notes
Backtrack Road	Road crossing wetland	2026	10	T7S, R2E	Not assigned	1085	Unknown	Backtrack road crossing various wetland.
Backtrack Road	Road crossing wetland	2027	10	T7S, R2E	Not assigned	1086	Unknown	Backtrack road crossing various wetland.
Backtrack Road	Road crossing wetland	2028	10	T7S, R2E	Not assigned	1087	Unknown	Backtrack road crossing various wetland.
Backtrack Road	Road crossing wetland	2029	10	T7S, R2E	Not assigned	1088	Unknown	Backtrack road crossing various wetland.
Base Area	South Fork year 2000 temporary diversion	2030	7	T7S, R2E	Not assigned		Jurisdictional	Temporary diversion identified by MDFWP in Fall 2000.
Base Area	Road east of Camp Blixseth	2031	7	T7S, R2E	W-45A		Jurisdictional	Possible road impacts to wetland

APPENDIX H

Appendix H
to Consent Decree
List of Stormwater Culverts[1]

Culvert No.	Sec.	Township	WL/BB Above	WL/BB Below
AN001	5	T7S R3E	None	None
AN002	5	T7S R3E	None	None
AN003	5	T7S R3E	None	None
AN004	5	T7S R3E	None	W305-02
AN005	5	T7S R3E	None	W20-02
AN006	5	T7S R3E	W16-02	None
AN007	5	T7S R3E	None	None
AN009	5	T7S R3E	None	None
AN010	5	T7S R3E	None	None
AN011	5	T7S R3E	None	None
AN012	5	T7S R3E	None	W13-02
AN013	5	T7S R3E	None	None
AN014	6	T7S R3E	None	None
AN015	6	T7S R3E	None	None
AN016	6	T7S R3E	None	None
AN017	6	T7S R3E	None	None
AN018	6	T7S R3E	None	None
AN019	6	T7S R3E	None	None
AN020	31	T6S R3E	None	None
AN021	31	T6S R3E	None	None
AN022	6	T7S R3E	None	None
AN023	6	T7S R3E	None	None
AN024	6	T7S R3E	None	None
AN025	6	T7S R3E	None	None
AN026	6	T7S R3E	None	None
AN027	6	T7S R3E	None	None
AN028	6	T7S R3E	None	None
AN029	6	T7S R3E	None	None
AN030	6	T7S R3E	None	None
AN031	6	T7S R3E	None	None
AN032	6	T7S R3E	None	None
AN033	6	T7S R3E	None	None
AN034	6	T7S R3E	None	None
AN035	6	T7S R3E	None	None

[1] Confirmation of the culverts on this list is subject to the provisions of the consent decree.

Culvert No.	Sec.	Township	WL/BB Above	WL/BB Below
AN036	6	T7S R3E	None	None
AN037	6	T7S R3E	None	None
AN038	6	T7S R3E	None	None
AN039	1	T7S R2E	None	None
AN040	1	T7S R2E	None	None
AN041	1	T7S R2E	None	None
AN042	1	T7S R2E	W12-02	None
AN044	1	T7S R2E	None	None
AN045	1	T7S R2E	None	None
AN046	1	T7S R2E	None	None
AN047	31	T6S R3E	None	None
AN048	31	T6S R3E	None	None
AN049	31	T6S R3E	None	None
AN050	31	T6S R3E	None	None
AN051	36	T6S R2E	None	None
AN052	5	T7S R3E	None	None
AN053	6	T7S R3E	None	None
AN054	6	T7S R3E	None	None
AN055	6	T7S R3E	None	None
AN056	6	T7S R3E	None	None
AN057	6	T7S R3E	None	None
AS001	7	T7S R3E	None	None
AS002	7	T7S R3E	None	None
AS003	12	T7S R2E	None	None
AS004	12	T7S R2E	None	None
AS005	12	T7S R2E	None	None
AS006	12	T7S R2E	None	None
AS007	1	T7S R2E	None	None
AS008	1	T7S R2E	None	None
AS009	1	T7S R2E	None	None
AS010	7	T7S R3E	None	None
AS011	12	T7S R2E	None	None
AS012	12	T7S R2E	None	None
AS013	12	T7S R2E	None	W503-02
AS014	12	T7S R2E	None	None
GC001	7	T7S R3E	None	None
GC002	7	T7S R3E	None	None
GC003	8	T7S R3E	None	None
GC004	8	T7S R3E	None	None
GC005	8	T7S R3E	None	None
GC006	8	T7S R3E	None	None

Culvert No.	Sec.	Township	WL/BB Above	WL/BB Below
GC007	8	T7S R3E	None	None
GC008	8	T7S R3E	None	None
GC009	8	T7S R3E	None	None
GC011	8	T7S R3E	None	None
GC012	8	T7S R3E	None	None
GC013	8	T7S R3E	None	None
GC014	8	T7S R3E	None	None
GC015	8	T7S R3E	None	None
GC016	8	T7S R3E	None	None
GC017	8	T7S R3E	None	None
GC018	8	T7S R3E	None	None
GC019	8	T7S R3E	None	None
GC020	8	T7S R3E	None	None
GC021	8	T7S R3E	None	None
GC022	17	T7S R2E	None	None
GC023	17	T7S R2E	None	None
GC024	17	T7S R2E	None	None
GC025	18	T7S R2E	None	None
GC026	18	T7S R2E	None	None
GC027	7	T7S R3E	None	None
GC029	7	T7S R3E	None	None
GC032	7	T7S R3E	None	None
GC040	8	T7S R3E	None	None
GC043	7	T7S R3E	None	None
GC044	7	T7S R3E	None	None
GC045	7	T7S R3E	None	None
GC046	7	T7S R3E	None	None
GC047	7	T7S R3E	None	None
GC048	7	T7S R3E	None	None
GC049	7	T7S R3E	None	None
GC050	7	T7S R3E	None	None
GC051	18	T7S R2E	None	None
GC052	18	T7S R2E	None	None
GC053	18	T7S R2E	None	None
LM001	7	T7S R3E	None	None
LM002	12	T7S R2E	None	None
LM003	1	T7S R2E	None	None
LM004	1	T7S R2E	None	None
LM005	1	T7S R2E	None	None
LM010	1	T7S R2E	None	None
LM011	2	T7S R2E	None	None

Culvert No.	Sec.	Township	WL/BB Above	WL/BB Below
LM012	2	T7S R2E	None	None
LM013	2	T7S R2E	None	None
LM014	2	T7S R2E	None	None
LM016	2	T7S R2E	None	None
LM017	2	T7S R2E	None	None
LM018	2	T7S R2E	None	None
LM020	2	T7S R2E	None	None
LM027	1	T7S R2E	None	None
LM032	1	T7S R2E	None	None
LM033	1	T7S R2E	None	None
LM034	12	T7S R2E	None	None
PM001	12	T7S R2E	None	None
PM014	12	T7S R2E	None	None
PM018	11	T7S R2E	None	None
PM020	12	T7S R2E	None	None
PM021	12	T7S R2E	None	None
PM022	1	T7S R2E	None	None
PM024	1	T7S R2E	None	None
PM029	12	T7S R2E	None	None
PM032	12	T7S R2E	None	None
PM033	12	T7S R2E	None	None
PM038	12	T7S R2E	None	None
PM045	12	T7S R2E	None	None
PM048	12	T7S R2E	None	None
PM049	12	T7S R2E	None	None
PM060	2	T7S R2E	None	None
PM061	11	T7S R2E	None	None
PM063	11	T7S R2E	None	None
PM064	11	T7S R2E	None	None
PM065	11	T7S R2E	None	None
PM066	2	T7S R2E	None	None
PM067	2	T7S R2E	None	None
PM068	2	T7S R2E	None	None
PM069	2	T7S R2E	None	None
PM070	2	T7S R2E	None	None
PM071	2	T7S R2E	None	None
PM073	2	T7S R2E	None	None
PM074	2	T7S R2E	None	None
PM075	2	T7S R2E	None	None
PM076	2	T7S R2E	None	None
PM077	10	T7S R2E	None	None

Culvert No.	Sec.	Township	WL/BB Above	WL/BB Below
R001	8	T7S R3E	None	None
YC001	5	T7S R3E	None	None
YC004	5	T7S R3E	None	W36-02
YC006	5	T7S R3E	None	None
YC007	5	T7S R3E	None	None
YC009	6	T7S R3E	None	None
YC010	6	T7S R3E	None	None
YC011	6	T7S R3E	None	None
YC012	7	T7S R3E	None	None
YC013	7	T7S R3E	None	None
YC014	7	T7S R3E	None	None
YC015	8	T7S R3E	None	None
YC017	5	T7S R3E	None	None
YC019	5	T7S R3E	None	None
YC020	6	T7S R3E	None	None
YC021	6	T7S R3E	None	None
YC025	7	T7S R3E	None	None
YC026	7	T7S R3E	None	W50
YC027	7	T7S R3E	None	None
YC029	12	T7S R2E	None	None
YC030	12	T7S R2E	None	None
YC031	7	T7S R3E	None	None
YC032	6	T7S R3E	None	None
YC033	7	T7S R3E	None	None